

Claims

What is claimed is:

1. A fuel dispenser for receiving fuel from a fuel source, dispensing the fuel to an output device, and metering the quantity of fuel dispensed to the output device, the fuel dispenser comprising:

- a. a housing including:
 - (i) an inlet port for coupling the housing to the fuel source,
 - (ii) a first outlet port for coupling the housing to the output device,
 - (iii) a first meter chamber having a chamber inlet, a chamber outlet, and a chamber opening,
 - (iv) an inlet passage extending from the inlet port to the chamber inlet for conveying fuel received from the fuel source from the inlet port to the first meter chamber,
 - (v) a first outlet passage extending from the first meter chamber outlet to the first outlet port for conveying fuel from the first meter chamber to the outlet port,
- b. a first nutating disk meter comprising a first disk having a magnetic portion thereof, the nutating disk meter disposed within the meter chamber of the housing and arranged to rotate when fuel flows from the chamber inlet to the chamber outlet;
- c. a first chamber cover for sealing the opening of the first meter chamber;
- d. a first sensor disposed outside and adjacent to the first meter chamber for detecting rotation of the first disk and generating a corresponding signal.

2. A fuel dispenser according to claim 1 wherein the disk comprises a plurality of separate magnetic portions thereof whereby the first sensor detects multiple pulses corresponding to each rotation of the disk.

3. A fuel dispenser according to claim 1 wherein the housing further comprises a filter manifold along the inlet passage and arranged for attachment of a fuel filter so that fuel flowing through the inlet passage flows through the fuel filter before entering the rotating disk meter.

4. A fuel dispenser according to claim 1 wherein the housing further comprises a check valve access port along the inlet passage and arranged to accept a check valve that limits the flow of fuel so that it only flows in the direction from the inlet port to the first outlet port.

5. A fuel dispenser according to claim 1 wherein the housing further comprises at least one mounting flange arranged for fixably mounting the housing in one of a plurality of positions within at least one dimension.

6. A fuel dispenser according to claim 1 further comprising a telescoping riser pipe connected to the inlet port.

7. A fuel dispenser according to claim 1 wherein the housing further comprises a pressure relief valve access port along one of the inlet passage and the first outlet passage, the pressure relief valve arranged to accept a pressure relief valve for detecting the fuel pressure within the inlet or first outlet passage, respectively.

8. A fuel dispenser according to claim 1, the housing further comprising:

- a. a second outlet port;
- b. a second meter chamber having a chamber inlet, a chamber outlet, and a chamber opening;
- c. a second outlet passage extending from the second chamber outlet to the second outlet port for conveying fuel from the second meter chamber to the second outlet port,

wherein the inlet passage extends from the inlet port to the chamber inlets of the first and second meter chambers for conveying fuel from the inlet port to the first and second meter chambers, the fuel dispenser further comprising:

- a. a second nutating disk meter comprising a second disk having a magnetic portion thereof, the second nutating disk meter disposed within the second meter chamber of the housing and arranged to rotate when fuel flows from the second chamber inlet to the second chamber outlet;
- b. a second chamber cover for sealing the opening of the second meter chamber; and
- c. a second sensor disposed outside and adjacent to the second meter chamber and magnetically coupled to the second disk for detecting rotation of the second disk and generating a corresponding second signal.

9. A fuel dispenser according to claim 8 wherein the housing further comprises:

- a. a filter manifold along the inlet passage and arranged for attachment of a fuel filter so that fuel flowing through the inlet passage flows through the fuel filter before entering the nutating disk meters; and
- b. a check valve access port along the inlet passage and arranged to accept a check valve that limits the flow of fuel so that it only flows in the direction from the inlet port to the meter chambers.

10. A method of repairing a fuel dispenser comprising a housing having a meter chamber with a chamber opening, a first nutating disk meter disposed within the meter chamber, and a chamber cover sealing the chamber opening, the method comprising the steps of:

- a. removing the chamber cover from the chamber opening;
- b. removing the first nutating disk meter from the meter chamber;

- c. inserting a second rotating disk meter into the meter chamber;
and
- d. installing the chamber cover over the chamber opening.